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Ten years Council of Europe Rec(2004)11: Lessons learned and outlook

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ZORA URL: <https://doi.org/10.5167/uzh-133866>
Conference or Workshop Item

Originally published at:

Driza Maurer, Ardita (2014). Ten years Council of Europe Rec(2004)11: Lessons learned and outlook. In: 6th International Conference on Electronic Voting, Lochau/Bregenz, Austria, 28 October 2014 - 31 October 2014. E-Voting.CC GmbH, 111-117.

Ten Years Council of Europe Rec(2004)11

Lessons learned and outlook

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Abstract— E-voting must comply with requirements for democratic votes and elections. Adopted in 2004, the Council of Europe Recommendation Rec(2004)11 is one of the first regulatory efforts in this area and so far the only one at the international level. Its ambition is to map legal principles for democratic elections with operational and technical requirements specific to e-voting. This paper presents an overview of lessons learned from the application of the Recommendation during the past ten years and discusses the need for an update.

Keywords— Council of Europe, e-voting, regulation, Rec(2004)11, recommendations, update

I. INTRODUCTION

The Recommendation of the Committee of Ministers to member States on legal, operational and technical standards for e-voting, also known as Rec(2004)11 [17], was adopted on 30 September 2004 by the Committee of Ministers which also took note of the Explanatory memorandum thereto [18]. Both documents were compiled by a Multidisciplinary Ad Hoc Group of Specialists on legal, operational and technical standards for e-enabled voting.

The Recommendation defines e-voting as an e-election or e-referendum that involves the use of electronic means at least in the casting of the vote, covering both e-voting in controlled (e.g. voting machines in polling stations) and in uncontrolled environments (e.g. internet voting from a private computer). Rec(2004)11 became rapidly a reference for Council of Europe (CoE) States that introduce or envisage introducing e-voting¹. It remains so far the only international instrument to propose an e-voting regulation.

Two additional instruments [14][15] were adopted in 2010, however with the lower status of guidelines. They propose guidance on certification and transparency issues and are meant to complete the recommendations on these issues². A formal proposal to update the Recommendation was

introduced in the 2012 review meeting. The issue of an update is on the agenda of the 2014 review meeting³.

This paper reflects on the necessity of updating Rec(2004)11 based on e-voting experiences and the use of the Recommendation in the past ten years in the CoE region. The main arguments in favour of an update include lessons learned by experimenting with e-voting or by observing it, critical assessments of the Recommendation as well as technical developments (section 2). A possible line for approaching the update is presented by way of conclusion (section 3).

The paper is based on our report to the Council of Europe on the possible update of the Recommendation [19]. The report was discussed at a CoE's organized meeting of experts in Vienna (19 December 2013). Findings are grounded mainly on the documents of the four CoE biennial review meetings that took place since its adoption, on e-voting regulations and evaluations (e.g. by countries, by international organizations, etc.) and on e-voting related work by organizations or countries beyond the CoE region. The paper focuses on e-voting regulatory issues alone.

II. LESSONS LEARNED

A. The special place of Rec(2004)11

A recent study [2] mentioned that emerging international electoral standards on e-voting are struggling to catch up with the introduction of technology into the voting and counting process. This could also apply to Rec(2004)11.

The starting point for introducing the Recommendation in 2004 was the observation that member states are already using, or considering using e-voting for a number of purposes (see the Preamble). Ten years later, OSCE/ODIHR [34] observed that today, almost all electoral processes make some use of new technologies from voter registration to tabulation of results.

Regulating e-voting is a challenging task and countries look for guidance. The Recommendation timely responded to such needs, rapidly becoming a reference (see also [27] on the

¹ Country reports presented at the CoE biennial meetings on e-voting (see http://www.coe.int/t/dgap/democracy/Activities/GGIS/E-voting/Default_en.asp) reflect the implementation of the recommendations by countries. U.S. EAC 2011 report on internet voting found that in particular internet voting systems were either conceived or updated by incorporating the CoE Recommendation.

² Transparency is dealt in paragraphs 20 to 23 (Appendix I) and certification in paragraphs 111 and 112 (Appendix III) of the Recommendation.

³ A fifth review meeting on the Recommendation organized by the Council of Europe will be held on 28 October 2014 in Lochau/Austria, back to back with EVOTE 2014.

role of Rec(2004)11 in fostering e-democracy). It is still the only international instrument to propose standards for regulating remote and non remote e-voting. The adoption of common standards in the Recommendation was considered key to guaranteeing the respect of all the principles of democratic elections and referendums when using e-voting [18] [37].

A number of organisations have produced guidelines on the introduction of new technologies in voting. The OSCE/ODIHR [34], IDEA [5] the Carter Center [10], the Organization of American States [33] and the National Democratic Institute for International Affairs [35] have approached the issue of standards for electronic voting and counting technologies from the perspective of election observers. IFES [24] proposes a step-by-step approach to the introduction of e-voting, including legal considerations. IFES [45], IDEA [25] or the EU [23] discuss key principles that should inform the introduction of e-voting or more generally of technology in elections. The Council of Europe also developed a Handbook [16] to provide guidance on the steps to be considered when introducing e-voting.

These documents focus on identifying good practices or formalizing procedures. They do not aim at providing an e-voting regulation and most of them are domain specific focusing on the needs of election officials, observers and so on. They need to be taken into account when updating the Recommendation but they are not equivalent to it (e.g. in their respective scopes) and no substitute to it. One explanation to that may lie in the fact that no other institution has a mandate equivalent to the CoE in setting electoral standards, at least in Europe⁴.

Rec(2004)11 has also been referenced by countries and organizations beyond the CoE region when considering e-voting regulations or standards. A study commissioned by Elections Canada [39] considers the work done by CoE in this field as the most extensive while creating a legal framework for a new technology. It recommends election officials to consider referencing the Rec(2004)11 check-list. The U.S. Electoral Assistance Commission [40] has referenced the Recommendation in an effort to locate standards and requirements on internet voting utilized elsewhere in the world which include voting specific functionality, accessibility and security requirements.

B. Guiding principles or detailed requirements?

Rec(2004)11 is a pioneer effort which attempts to apply a finite but not consolidated number of legal requirements for democratic elections, dispatched in a set of international instruments only some of which are mentioned in the Preamble of the Recommendation, to e-voting.

⁴ According to article 1 of the 1949 adopted Statute of the Council of Europe the organization has the aim to achieve a greater unity between its members for the purpose of safeguarding and realising principles which are their common heritage. This aim shall be pursued by agreements and common action in legal and administrative matters. Article 15 of the CoE Statute foresees that action may take the form of recommendations to the governments of members. Available: <http://conventions.coe.int/Treaty/en/Treaties/Html/001.htm>

The Recommendation is a non-mandatory instrument despite the fact that it has been accepted unanimously by the Council of Ministers and it says that member states should consider reviewing their relevant domestic legislation in the light of this Recommendation when introducing e-voting (recommendation iii). Furthermore the text of the Recommendation and of the Explanatory Memorandum itself imply that the recommendations are not exhaustive. However, in several cases, the Recommendation has been considered as a ready-to-use check-list of requirements for building and evaluating e-voting systems. Whether the Recommendation is ready for this use is questionable.

Since the first review meeting in 2006 it has been reconfirmed that the Recommendation was accepted by member States as a valid benchmark by which to assess and evaluate e-voting systems. At the same time it has been admitted that several issues, such as accreditation, certification or observation needed further research. The two guidelines on certification and transparency were endorsed as providing a common reference to be viewed, however, as work in progress since the practical experiences in the field of e-voting were in constant evolution. The last 2012 review meeting concluded that existing loopholes, ambiguities or tensions in the Recommendation justify a formal update.

Norway is the only country to have given Rec(2004)11 recommendations (with few exceptions however) the status of legal basis regulating both 2011 and 2013 internet voting trials [31][32]. However some of the recommendations were excluded and Norway also introduced verification mechanisms which are not dealt with in the Rec(2004)11 such as return codes [4].

The Norwegian system has been evaluated [1] for its conformity to Rec(2004)11 (see also [3]). The evaluation [1] concludes that as a package, the Council of Europe Recommendations represent a very comprehensive and detailed set of standards for the conduct of electronic voting. The Norwegian Internet voting system was found compliant with 85 out of the 102 relevant recommendations and non-compliant with three recommendations. This was considered a significant achievement given the exacting nature of the Council of Europe Recommendations. The difficulties encountered in applying the requirements of Rec(2004)11 prompted the authors to present a critical assessment of the recommendations.

The study [1] concluded that the Recommendation does not build on existing public international law, that it says little on the legal basis, that it aims at designing standards applicable to all circumstances and such a broad scope is problematic when it comes to their implementation, that it ignores the fact that trade-offs between standards are sometimes necessary in electronic voting (such as the need for secret voting against the need for transparency, and the need to be able to audit the function of the voting system), that the need to comply with the Recommendation as a whole is problematic, that a number of standards may appear to be overlapping or redundant, that the wording is sometimes vague (interpretation is needed) and other times too detailed and, finally, that the recommendations are technically neutral

in their wording, but not in their consequences when attempting to comply.

Similar critiques on the wording and structure of Rec(2004)11 were also issued earlier in two theoretical analysis of the Recommendation [26], [30]. Without considering the merits of the standards included in the Recommendation, [30] employed engineering requirements and reverse engineering techniques to show that standards are expressed in a poor way and to make a first, simple, restructuring of the Recommendation. Considering the Recommendation as a check-list of requirements for system certification purposes, the study concludes that the Recommendation as it stands makes certification against standards difficult. Several "original flaws" are identified including inconsistency, incompleteness and unclear scope, over-specification, under-specification, redundancy and repetition as well as maintainability and extensibility issues. The authors believe that a broadly applicable instrument would be genuinely useful both to governments procuring e-voting systems, and to vendors developing and maintaining such systems. So they undertake a first-step restructuring of the Recommendation, rooting out the identified original flaws.

Another study on a concrete use of the Recommendation [20] questioned the possibility for Rec(2004)11 to handle sufficiently real-world attacks against elections using e-voting. Under this perspective the Recommendation was considered as being (or ought be) specific enough as to provide detailed solutions to deal with specific threats such as skilled, creative, personally motivated and appropriately equipped students planning and executing attacks against e-voting systems. The authors propose that Rec(2004)11 be further improved by explicitly pointing out the necessity of implementing adequate countermeasures to different types of attacks and that the development of a special security strategy to deal with attacks that target voters' acceptance of e-voting should be recommended in Rec(2004)11.

The discussion on the adequacy of national regulations to cover current forms of e-voting and the required level of detail of such regulations is informative also for Rec(2004)11 given the similar challenges that all regulations face. The German Constitutional Court considered in its 2009 decision [8] that the Federal Ordinance on the Deployment of Voting Machines in Elections was unconstitutional because it did not contain provisions ensuring that only those voting machines are approved and used which comply with the constitutional preconditions of the principle of the public nature of elections (see paragraph 145 and ff. of the Court's decision) which requires that each voter, without any specific technical knowledge, is able to make sure that the system performs correctly.

The Austrian Constitutional Court in its 2011 decision [42] arrived at a similar conclusion, although based on different principles. The act regulating the elections of the Students' Union was found to be unconstitutional because it did not provide detailed requirements on the e-voting system and on the procedures to ensure that competent authorities could exercise their controlling rights. Both the German and the Austrian quashed regulations have not been updated since.

The Estonian Constitutional Judgement of the Supreme Court of 2005 [38] examined the e-voting legal basis only from the point of view of the principle of constitutionality in relation with the right to change a vote in the internet voting context alone. The Court explained that the right to change the e-vote is in accordance with the CoE Recommendation [29] and with the Estonian Constitution.

The adequacy and level of detail of national e-voting regulations have been discussed elsewhere as well. Belgium Federal and Regional Administrations commissioned a thorough study on e-voting [6] which considers Rec(2004)11 as the main benchmark for evaluating e-voting.

Finland's use of voting machines in polling stations was monitored in the light of Rec(2004)11 by both Electronic Frontier Finland [21] - a Finnish non-profit - and the Council of Europe, Congress of Local and Regional Authorities [44].

France's non-remote e-voting is regulated by specific legislation while remote internet voting, must comply with recommendations by the National Commission on Informatics and Liberties [12] whose structure and content presents many commonalities with Rec(2004)11. A recent thorough report [11] recommended that the list of legal requirements for authorizing the use of voting machines must be completed (recommendation 2).

Netherlands discontinued all forms of e-voting because, in addition to computer security problems, the embedding of the voting machines within the legal framework was considered very weak. Another lesson from the Netherlands is that technical choices made in the past to embed basic principles of elections need to be periodically reconsidered [28].

Swiss federal legislation on e-voting from uncontrolled environments introduced in 2002 presented many commonalities with Rec(2004)11 [7]. The Federal Ordinance⁵ was recently modified to reflect lessons learned during the past ten years [13] and was completed with a detailed technical regulation⁶.

To conclude, the scope and aim of the Recommendation need to be clarified. While Rec(2004)11 was initially intended to provide guidance, it has in several occasions been referred to as a complete and comprehensive list of requirements against which to evaluate e-voting systems. As a guiding document the Recommendation is sometimes too detailed and when considered as a take-it-or-leave-it check-list of requirements its application has proved difficult.

Furthermore the level of detail of the Recommendation requires special attention. In the light of experiences made and lessons learned so far it can be assumed that a readily implementable check-list of requirements will receive greater attention. It should be comprehensive and coherent to facilitate implementation and control. It should at least contain necessary requirements to ensure compliance of e-voting with

⁵ In force since 15 January 2014, <http://www.admin.ch/opc/fr/classified-compilation/19780105/index.html>

⁶ In force since 15 January 2014, the technical regulation is a Federal Chancellery Ordinance: <http://www.admin.ch/opc/fr/classified-compilation/20132343/index.html>

all international standards for democratic elections while leaving individual countries the necessary room for implementing their own electoral specificities.

C. Placing e-voting into its context

Reference [26] found it problematic that requirements (mainly security requirements) for e-voting are measured (*as secure as*) against requirements for non-electronic voting systems. As there exist no widely accepted metrics for measuring, reasoning by analogy flaws the comparison between the two. This critique needs to be addressed in a future update.

Reference [26] also draws attention to the necessary distinction between matters of public policy which affect the whole electoral system and matters of voting technology when introducing recommendations. The following example from the implementation of the Recommendation illustrates this.

In some cases, the same recommendation is implemented in opposing ways by different countries in accordance with their own specificities. This is the case with "secrecy and freedom of the vote" (recommendations 9 to 19). Norway and Estonia introduced multiple voting, or the right to change the e-vote for internet voters alone and a precedence of paper ballots over electronic ballots. This was meant to offer the voter a way to get around voting coercion and vote buying (which may arise in remote voting, because the voter can be forced to cast his or her vote in the presence of another person). Although multiple voting literally contradicts recommendation 5, [4] and [38] found that this may be interpreted to respect the Recommendation. France and Switzerland do not allow multiple voting and assign the same value to a validly issued ballot, be it on paper or electronic. Their point of view is that internet voting is just another form of distant voting from an uncontrolled environment, and that coercion will not be addressed differently for internet voting than for postal voting. ODIHR⁷ encourages France and Switzerland to introduce multiple voting but says nothing of the impact this would have on the system as a whole given the inequality it will create with other channels and the fact that not all voters have access to internet voting.

The national legal context should be taken into account when regulating e-voting. Some issues may only concern e-voting. Others, although introduced in an e-voting context, are a matter of public policy (for example related to remote voting) not of voting technology. Their introduction will affect the whole system. Furthermore the technical dimension of e-voting is important and should be kept in mind when regulating it. Reasoning by analogy with postal voting has serious limits and must be used with care.

D. Same provisions for different e-voting systems?

Rec(2004)11 applies a number of legal requirements for democratic elections to an indefinite number of voting

⁷ See OSCE/ODIHR'S 2012 reports on both countries' parliamentary elections, <http://www.osce.org/odihr/elections>

solutions, collectively known as remote and non-remote e-voting, that only share one common characteristic: the use of electronics in casting the vote. As the above mentioned analysis of the conformity of the Norwegian system showed, several recommendations are clearly written with non-remote e-voting in mind and have proved difficult to implement in an internet voting context.

Requirements and standards in the Recommendation should clearly indicate to which of the two types of e-voting they apply. Venice Commission [22] stated that e-voting in supervised environments must be treated differently from e-voting in unsupervised environments. In particular, the issues of secrecy and freedom of the vote are to be handled differently in the two cases. So, a prior determination when updating the Recommendation should be clearly to distinguish between the two categories. There is general consensus on this admitted conclusion and it was included in the report of the Rec(2004)11 review meeting of 2012 as well.

E. Technology developments, new concepts and solutions

As indicated by its title, the Recommendation is multi-disciplinary and requires combined expertise from different areas. Important work has taken place on the technical aspects of e-voting such as e-voting protocols, e-voting control and certification or e-voting increased transparency through cryptographic solutions⁸. Their consideration in the light of Rec(2004)11 goes beyond the scope of this paper. However their significance for the Recommendation needs to be examined in view of an update.

An interesting example from a regulatory perspective is work on certification [43] as it illustrates the impact legislation has on the design and control of e-voting systems. The broad principles mentioned in Appendix I of the Recommendation serve as legal background. Based on them, detailed security requirements and methods to measure and evaluate e-voting systems' security have been developed. They must be considered in view of an update of the recommendations, namely those contained in Appendixes II and III.

OSCE/ODIHR has monitored the use of e-voting in elections in different CoE countries. Its reports provide valuable information on the implementation of the Recommendation (which serves as a legal benchmark) as well as on the legal frameworks for e-voting in different countries⁹. ODIHR often gives substance to high-level requirements. Its 2013 published Handbook for the observation of new voting technologies includes a collection of such detailed recommendations. However the leap from the general OSCE and Council of Europe requirements to specific

⁸ Proceedings of periodical conferences such as Bregenz EVOTE, EVT/Wote, and Vote-ID give a good overview of such developments. See the respective websites: <http://www.e-voting.cc/en/publications/proceedings/> ; <https://www.usenix.org/conference/evtwote> ; <http://www.voteid13.org/>

⁹ OSCE/ODIHR has reported on the use of new voting technologies in several countries in the region and beyond, including Norway 2013, U.S.A. 2013, France 2012, Norway 2012, Switzerland 2012, Russian Federation 2012, Estonia 2011, Belgium 2007, Estonia 2007, Finland 2007, Kazakhstan 2007, the Netherlands 2007, Belgium (Expert Visit on New Voting Technologies) 2006, Kazakhstan 2006. All reports can be retrieved from <http://www.osce.org/odihr/elections>

recommendations such as those on introducing verifiability in e-enabled elections, is somewhat huge and only based on the even-less-mandatory Guidelines on transparency¹⁰.

Several new concepts have been discussed and even introduced in the past ten years in e-voting. Most of them aim at ensuring transparency and fostering trust and confidence in the e-voting channel and are reflected in the Guidelines on transparency. Such concepts include "the use of a second medium to store the vote to improve transparency", the related "mandatory count of the second medium in a statistically meaningful number of randomly selected polling stations", specific "rules dealing with discrepancies between the mandatory count of the second medium and the official electronic results", the requirement to "gain experience in providing mechanisms that allow voters to check whether their vote was counted as intended" (paragraphs 13 to 16 of the Guidelines). Also the concept of "chain of trust in e-enabled elections" according to which voters should be able to verify if their e-vote was cast as intended, recorded as cast and counted as recorded has been implemented, introducing a new possibility for the voter to prove that their own single e-vote was cast as intended, recorded as cast and counted as recorded.

Although inspired by traditional voting, these mechanisms are new to electoral legislation. They are specific to e-voting and appear today as necessary to ensure that the public can place the same trust in e-voting as in other non-electronic voting systems. As usual with experiments, practice has so far preceded regulation. However we are now at a point where there exists a certain consensus on their use and they are being introduced in a number of countries¹¹. Such new concepts and mechanisms being legally relevant, they need to be defined and their use regulated by law. The general requirements of transparency in the Recommendation and Guidelines do not regulate their implementation, operation, and control.

In addition to new concepts, our understanding of existing concepts has evolved. Experience with e-voting machines in the U.S.A. for instance shows that while voting system standards and certification against standards are useful for examining the basic aspects of voting machines, they cannot ensure secure voting systems, security being a negative quality [9]. A recent report [36] recommended reforming the certification process and conducting systematic after-election-auditing of voting equipment. Similar arguments are heard in Europe as well where the cost-efficiency of certification has been questioned and individual and universal verifiability is seen as offering better guarantees while at the same time being less costly than certification.

In the light of the previous examples and given the recognized position of the Recommendation in the regulatory

field, it is necessary that Rec(2004)11 be updated to take into account technology developments and current practices.

III. UPDATE OF REC(2004)11

As with other technology related developments, e-voting regulation is being adjusted as technology advances and our understanding of it improves. In order to provide basic guidance for countries and also ensure that Council of Europe's electoral heritage is integrated in a coherent way in e-voting regulations by countries, the Recommendation needs an update in the light of recent developments and experience gained. Below we will present some thoughts on how to tackle the updating work.

A. *Prior determinations*

Compared to a similar document, the U.S. Voluntary Voting System Guidelines (VVSG) [41], the structure and language of Rec(2004)11 is very different. Both are voluntary. However, if adopted, VVSG provides a check-list ready for use by authorities, vendors, certifying bodies, etc., while Rec(2004)11 was intended to provide guidance, although some parts of it are too detailed for such a purpose.

Before undertaking a thorough update of the Recommendation, a decision has to be made on the kind of document we want. It can be assumed that a readily implementable (by authorities as well as by industry) check-list will receive greater attention. This decision will influence the structure, content, level of detail and wording of the entire Recommendation.

As mentioned earlier the level of detail requires attention. A detailed Recommendation may be interesting as countries look for guidance. However, the higher the level of detail, the greater the probability that the Recommendation cannot apply 100% in a specific case. A solution could be to adopt a modular approach, instead of the current situation which requires that the Recommendation be applied as "one block". The modular approach implies a mandatory layer of recommendations (minimum standards applicable everywhere in the region) on which modules of additional, optional standards would be build. Both a generic document and a more detailed one are possible choices for the Recommendation. Both require a good interleaving of legal, operational and technical requirements. Once the level of detail has been decided, it has to be applied coherently throughout the document.

Another prior determination would be clearly to distinguish recommendations dedicated to e-voting in controlled (polling stations) or in uncontrolled (remote voting) environments.

The Recommendation and the two Guidelines were developed separately (respectively in 2004 and 2010) and have different legal value. However they are closely linked to each other. Consolidating the three documents (merging, simplifying and streamlining) may be necessary.

In a second step, consideration may be given to a possible separation of hard-core requirements from more rapidly changing ones. Such a trend is observed in other similar

¹⁰ Examples include the recommendation in 2007 that Belgium introduces legislation on voter verified paper audit trail (VVPAT) or an equivalent verification procedure and the recommendation (2012) to France and Switzerland to consider the use of a verifiable internet voting scheme or an equally reliable mechanism for voters to check whether or not their votes were cast as intended.

¹¹ In addition to Norway, Estonia and several Swiss cantons are introducing E2E verification mechanisms.

regulations such as the European Citizens Initiative regulatory framework¹² as well as in national regulations on e-voting as shown by the latest modification of the Swiss federal regulation on e-voting.

B. Updating policy

Experiences indicate that an update of the Recommendation is currently necessary to reflect lessons learned and new developments. Additionally, a management and maintenance policy for the Recommendation is needed. This is necessary in particular if the Recommendation is conceived as a check-list of requirements with respect to technical requirements that embed legal principles for democratic elections. Experts from different disciplines such as law, engineering, mathematics etc. must be involved in the maintenance work. Their proposals should be validated by member States' representatives before being presented to the Committee of Ministers with the request to formally update the Recommendation.

In this respect it is necessary to define an updating policy and the scope and purpose of updates. An updating opportunity cannot be used to question everything continually. An update being a further development of issues, it is up to the body responsible for mandating the update also to define and scope it.

Update rates can fit in the biennial review cycle of Rec(2004)11 which is meant for recommendations and updates to be discussed in detail. However, the bulk of the work needs to be conducted by experts who will most probably meet more frequently, physically or virtually, in between meetings. Work done by them must be presented to and validated by member States' representatives at biennial meetings.

Biennial review meetings are important and fulfil their mandate as long as they have an active role in the updating of the Recommendation. If no update is proposed, if there is no follow-up on countries' experiences and lessons learned, the Recommendation will gradually become obsolete and biennial meetings would lose their substance.

C. Final remarks

E-voting regulations are still in their infancy and have not yet reached the maturity of the rest of electoral legislation. This is also true for Rec(2004)11 whose application in the past ten years provides us with important lessons which, in return, call for an update.

If work in 2004 started from a theoretical perspective, updating work in 2014 should start by considering the practical needs of administrations, voters, industry and other stakeholders.

The initial enthusiasm for e-voting in 2004 has given way to more lucidity and maturity in the consideration of risks and opportunities. Today's understanding of IT and e-voting should be duly taken into account in the updating process.

The aim is to ensure that the Recommendation is up-to-date, balanced and responsive to ongoing developments. A revised Recommendation would allow the Council of Europe to maintain its position as a recognised and cutting-edge actor in the field of e-voting.

All internet sources cited in this paper were accessed end August 2014

- [1] Barrat, J. and Goldsmith, B. (2012) *Compliance with International Standards, Norwegian e-vote project*, http://www.regjeringen.no/upload/KRD/Prosjekter/e-valg/evaluating/Topic7_Assessment.pdf
- [2] Barrat, J., Goldsmith, B. and Turner, J. (2012) *International Experience with Internet Voting, Norwegian e-vote project*, http://www.regjeringen.no/upload/KRD/Prosjekter/e-valg/evaluating/Topic6_Assessment.pdf
- [3] Barrat, J., Goldsmith, B. and Turner, J. (2012) *Speed and Efficiency of the Vote Counting Process, Norwegian e-vote project*, http://www.regjeringen.no/upload/KRD/Prosjekter/e-valg/evaluating/Topic4_Assessment.pdf
- [4] Barrat, J., Chevallier, M., Goldsmith, B., Jandura, D., Turner, J. and Sharma, R. (2012) "Internet voting and individual verifiability: the Norwegian return codes", in Kripp, M., Volkamer, M., Grimm, R. (Eds.) *Electronic Voting 2012, Proceedings of the 5th Conference on Electronic Voting 2012 (EVOTE2012)*
- [5] Barrat, J. (2012) *Observing e-enabled elections: how to implement regional electoral standards*, <http://www.idea.int/democracydialog/upload/Observing-e-enabled-elections-how-to-implement-regional-electoral-standards.pdf>
- [6] BeVoting, (2007) *Study of electronic voting systems, Part I, 15 April 2007 and Part II, 12 October 2007*, Part I http://www.ibz.rm.fgov.be/fileadmin/user_upload/Elections/fr/presentation/bevoting-1_gb.pdf, Part II http://www.ibz.rm.fgov.be/fileadmin/user_upload/Elections2011/fr/presentation/bevoting-2_gb.pdf
- [7] Braun, N. (2004) 'E-Voting: Switzerland's Projects and their Legal Framework – in a European Context' in Prosser, A. and Krimmer, R. (Eds.) *Electronic Voting in Europe. Technology, Law, Politics and Society*, Lecture Notes in Informatics (LNI) - Proceedings Series of the Gesellschaft für Informatik (GI), Volume P-47, pp. 43-52.
- [8] Bundesverfassungsgericht (2009), Decision 2 BvC 3/07, 2 BvC 4/07, of 3 March 2009, http://www.bundesverfassungsgericht.de/entscheidungen/cs20090303_2_bvc000307.htm
- [9] CALTECH/MIT Voting Technology Project (2012) *Voting, What has changes, What hasn't & What needs improvement* <http://vote.caltech.edu/content/voting-what-has-changed-what-hasnt-what-needs-improvement>
- [10] (The) Carter Center (2012) *The Carter Center Handbook on observing electronic voting, second edition*, http://www.cartercenter.org/resources/pdfs/peace/democracy/des/Carter-Center-E_voting-Handbook.pdf
- [11] Commission des lois constitutionnelles du Sénat français/Anziani, A. and Lefèvre A. (2014) *Rapport d'information no 445 (2013-2014) sur le vote électronique*, <http://www.senat.fr/rap/r13-445/r13-445.html>
- [12] Commission Nationale de l'Informatique et des Libertés/France (CNIL) (2010), *Délibération n° 2010-371 du 21 octobre 2010 portant adoption d'une recommandation relative à la sécurité des systèmes de vote électronique*, <http://www.cnil.fr/documentation/deliberations/deliberation/delib/249/>
- [13] Conseil fédéral/Suisse (2013) *Rapport du Conseil fédéral sur le vote électronique. Evaluation de la mise en place du vote électronique (2006-*

¹² See Regulation (EU) No 211/2011 of the European Parliament and of the Council of 16 February 2011 on the citizens' initiative, (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:065:0001:0022:en:PDF>) and the Commissions' implementing regulation of 17 November 2011 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:301:0003:0009:EN:PDF>)

- 2012) et bases de développement, du 14 juin 2013, <http://www.bk.admin.ch/themen/pore/evoting/07977/index.html?lang=fr>
- [14] Council of Europe (2011) *Certification of e-voting systems, Guidelines for developing processes that confirm compliance with prescribed requirements and standards*, http://www.coe.int/t/dgap/democracy/Activities/GGIS/E-voting/E-voting%202010/Biennial_Nov_meeting/Guidelines_certification_EN.pdf.
- [15] Council of Europe (2011) *Guidelines on transparency of e-enabled elections*, http://www.coe.int/t/dgap/democracy/Activities/GGIS/E-voting/E-voting%202010/Biennial_Nov_meeting/Guidelines_transparency_EN.pdf
- [16] Council of Europe/Susanne Caarls (2010) *E-voting handbook, Key steps in the implementation of e-enabled elections*, http://www.coe.int/t/dgap/democracy/Activities/GGIS/E-voting/E-voting2010/Biennial_Nov_meeting/ID10322_GBR_6948_Evoting_handbook_A5_HD.pdf
- [17] Council of Europe (2004) *Recommendation of the Committee of Ministers to member states on legal, operational and technical standards for e-voting*, adopted by the Committee of Ministers on 30 September 2004, <https://wcd.coe.int/ViewDoc.jsp?id=778189>
- [18] Council of Europe (2004) *Explanatory Memorandum to the Draft Recommendation Rec(2004)11 of the Committee of Ministers to member states on legal, operational and technical standards for e-voting*, <https://wcd.coe.int/ViewDoc.jsp?id=778189>
- [19] Driza Maurer, A. (2013) *Report on the possible update of the Council of Europe Recommendation Rec(2004)11 on legal, operational and technical standards for e-voting*, 29 November 2013, <http://www.electoralpractice.ch/wp-content/uploads/2014/01/REPORT-DRIZA-MAURER-20131129.pdf>
- [20] Ehringfeld, A., Naber, L., Grechenig, T., Krimmer, R., Traxl, M. and Fischer, G. (2010) "Analysis of Recommendation Rec(2004)11 based on the experiences of specific attacks against the first legally binding implementation of e-voting in Austria", in Krimmer, R. and Grimm, R. (Eds.) *Electronic Voting 2010 (EVOTE10)*, Lecture Notes in Informatics (LNI) - Proceedings Series of the Gesellschaft für Informatik (GI), Volume P-167, pp. 225-237
- [21] Electronic Frontier Finland, Vähä-Sipilä, A. (ed.) (2009) *A report on the finish e-voting pilot*, http://www.effi.org/system/files?file=FinnishEVotingCoEComparison_Effi_20080801.pdf
- [22] European Commission for Democracy through Law (Venice Commission)/Grabenwarter, Ch. (2004) *Report on the compatibility of remote voting and electronic voting with the standards of the Council of Europe*, [http://www.venice.coe.int/webforms/documents/CDL-AD\(2004\)012.aspx](http://www.venice.coe.int/webforms/documents/CDL-AD(2004)012.aspx)
- [23] European Commission (2006) *Methodological Guide on Electoral Assistance*, http://ec.europa.eu/europeaid/multimedia/publications/documents/thematic/ec_methodological_guide_on_electoral_assistance_en.pdf
- [24] Goldsmith, B. (2011) *Electronic Voting & Counting Technologies, A Guide to Conducting Feasibility Studies*, IFES Election Technology Series, http://www.ifes.org/~media/Files/Publications/Books/2011/Electronic_Voting_and_Counting_Tech_Goldsmith.pdf
- [25] IDEA (2011) *Introducing electronic voting, Essential Considerations. Policy paper*, <http://www.idea.int/publications/introducing-electronic-voting/>
- [26] Jones, D. (2004) *The European 2004 Draft E-Voting Standard: Some critical comments*, <http://homepage.cs.uiowa.edu/~jones/voting/coe2004.shtml>
- [27] Krimmer, R. (2012) "The Evolution of E-voting: Why Voting Technology is Used and How it Affects Democracy", *Tallinn University of Technology Doctoral Theses Series I: Social Sciences*, No. 19
- [28] Loeber, L. (2008) "E-Voting in the Netherlands; from General Acceptance to General Doubt in Two Years" in Krimmer, R. and Grimm, R. (Eds.) (2008) *Electronic Voting 2008 (EVOTE08)*, Lecture Notes in Informatics (LNI) - Proceedings Series of the Gesellschaft für Informatik (GI), Volume P-131
- [29] Madise, Ü. and Vinkel, P. (2011) "Constitutionality of Remote Internet Voting: The Estonian Perspective", *Juridica International. Iuridicum Foundation*, Vol. 18, pp. 4-16.
- [30] McGaley, M. and Gibson, J.P. (2006) *A Critical Analysis of the Council of Europe Recommendations on e-voting*, https://www.usenix.org/legacy/event/evt06/tech/full_papers/mcgaley/mcgaley.pdf
- [31] Norway (2013) *Regulations relating to trial internet voting during advance voting and use of electronic electoral rolls at polling stations on election day during the 2013 parliamentary election in selected municipalities*, http://www.regjeringen.no/upload/KRD/Kampanjer/valgportal/Regelverk/Regulations_relating_to_trial_internet_voting_2013.pdf
- [32] Norway (2011) *Regulations relating to trial electronic voting during advance voting, use of electoral roll at polling stations and use of new ballot papers at the 2011 municipal and county council elections in the selected municipalities of Bodø, Bremanger, Hammerfest, Mandal, Radøy, Re, Sandnes, Tynset, Vefsn and Ålesund, and the county municipalities of Møre og Romsdal, Hedmark, Vestfold, Vest-Agder, Rogaland, Hordaland, Sogn og Fjordane, Nordland and Finnmark*, http://www.regjeringen.no/upload/KRD/Kampanjer/valgportal/Regelverk/E-valgsforskriften_endelig_versj_230611_engelsk.pdf
- [33] Organisation of American States (2010) *Observing the Use of Electoral Technologies: A Manual for OAS Electoral Observation Missions*, http://www.oas.org/es/sap/docs/Technology_English-FINAL-4-27-10.pdf
- [34] OSCE/ODIHR (2013) *Handbook for the observation of new voting technologies*, <http://www.osce.org/odihr/elections/104939>
- [35] Pran, V. and Merloe, P. (2008) *Monitoring electronic technologies in electoral processes: an NDI guide for political parties and civic organizations*, <http://www.ndi.org/node/14616>
- [36] Presidential Commission on Election Administration (2014) *The american voting experience: Report and Recommendations of the Presidential Commission on Election Administration*, <https://www.supportthevoter.gov/files/2014/01/Amer-Voting-Exper-final-draft-01-09-14-508.pdf>
- [37] Remmert, M. (2004) "Towards European Standards on Electronic Voting", in Prosser, A. and Krimmer, R. (Eds.), *Electronic Voting in Europe - Technology, Law, Politics and Society*, P-47, Gesellschaft für Informatik, pp. 13-16.
- [38] Republic of Estonia, Supreme Court, *Judgment of the Constitutional Review Chamber of the Supreme Court, Decision 3-4-1-13-05, 1st September 2005*, <http://www.nc.ee/?id=381>
- [39] Schwartz, B. and Grice, D. (2013) *Establishing a legal framework for e-voting in Canada*, http://www.elections.ca/res/rec/tech/elfec/pdf/elfec_e.pdf
- [40] U.S. Election Assistance Commission (EAC) (2011) *A survey of Internet Voting*, <http://www.eac.gov/assets/1/Documents/SIV-FINAL.pdf>
- [41] U.S. Election Assistance Commission (EAC) (2005) *2005 Voluntary Voting System Guidelines*, http://www.eac.gov/testing_and_certification/2005_vvsg.aspx
- [42] Verfassungsgerichtshof (2011) *Decision V 85-96/11-15, 13 December 2011*, http://www.vfgh.gv.at/cms/vfgh-site/attachments/7/6/7/CH0006/CMS1327398738575/e-voting_v85-11.pdf
- [43] Volkamer, M. (2009) *Evaluation of Electronic Voting, Requirements and Evaluation Procedures to Support Responsible Election Authorities*, Springer-Verlag Berlin Heidelberg 2009
- [44] Whitmore K., Congress of Local and Regional Authorities (2008) *Information Report on the Electronic Voting in the Finnish Municipal Elections observed on 26 October 2008, 1 December 2008*, <https://wcd.coe.int/ViewDoc.jsp?id=1380337&Site=Congress>
- [45] Yard, M. (Ed.) (2010) *Direct Democracy: Progress and Pitfalls of Election Technology*, IFES Election Technology Series, <http://www.ifes.org/Content/Publications/Books/2010/Direct-Democracy-Progress-and-Pitfalls-of-Election-Technology.aspx>